

Wendover Drinking Water System

Waterworks # 260004293
System Category – Large Municipal Residential

Annual Water Report

Prepared For:
The Corporation of the Township of Alfred & Plantagenet

Reporting Period of January 1st – December 31st 2024

Issued: February 24, 2025

Revision: 0

Operating Authority:



This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22

Table of Contents

Report Availability	1
Compliance Report Card	1
System Process Description	1
Raw Source	1
Treatment	1
Treatment Chemicals used during the reporting year:	2
Distribution	2
Summary of Non-Compliance	2
Adverse Water Quality Incidents	2
Non-Compliance	2
Non-Compliance Identified in a Ministry Inspection:	2
Flows	3
Raw Water Flows	3
Total Monthly Flows (m3/d)	3
Treated Water Flows	4
Monthly Rated Flows	4
Annual Total Flow Comparison	4
Regulatory Sample Results Summary	5
Microbiological Testing	5
Operational Testing	5
Inorganic Parameters	5
Schedule 15 Sampling:	6
Organic Parameters	6
Additional Samples	8
Major Maintenance Summary	8
Water Treatment Plant Maintenance	8
Distribution Maintenance	8
Appendix A - WTRS Data and Submission Confirmation	A

Report Availability

This system serves less than 10,000 residents. The annual reports will be made available publicly to residents of The Corporation of the Township of Alfred & Plantagenet. Notification should be made available on the municipal website and copies provided free of charge if requested at the Municipal Office located at 205 Old Highway 17 PO. Box 350 Plantagenet ON K0B 1L0.

Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	1 – On-site Inspection completed on September 26, 2024 There were no non-compliances identified – 100%
Ministry of Labour Inspections	0
QEMS External Audit	Off-Site Plan Audit – 2 OFI
AWQI's/BWA	1 – 1 TC in Distribution sample, May 8, 2024
Non-Compliance	0
Community Complaints	0
Spills	0
Watermain Breaks & Repairs	1

System Process Description

Raw Source

Raw water source for the Wendover Drinking Water System is the Ottawa River as per Permit to Take Water #96-P-4096. Raw water intake consists of a 195 m long x 200 mm diameter long polyethylene pipe. Intake end is equipped with coarse mesh screen. The low lift pumping station located on du Quai Ave. is equipped with three (3) horizontal centrifugal pumps (two duty, one standby), each rated at 10.5 L/s at 21 m Total Dynamic Head (TDH). A 200 mm diameter raw water transmission line from the low lift pumping station conveys raw water to the water treatment plant.

Treatment

The Wendover Drinking Water System is a surface water treatment facility, rated at a maximum daily flow of 1806 m³/day for raw water higher than 1 degree Celsius and 1517 m³/day for raw water temperatures below 1 degree Celsius. The water treatment plant consists of the following components: a dual train packaged conventional filtration plant consisting of in-line mixing, coagulation, flocculation, sedimentation and filtration. Disinfection is achieved by chlorination and pH control by soda ash.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Soda Ash	pH adjustments	Brenntag
Aluminium Hydroxide Sulphate (PAS-08)	Coagulant	Kemira
Polymer - Norfloc 127H	Flocculation Agent	Brenntag
Sodium Hypochlorite	Post Disinfection	UBA

Distribution

Water is pumped by two (2) vertical turbine high lift pumps (one duty; one standby) each rated at 19.5 L/s at 50 m TDH to the elevated storage tank with a capacity of 1940m³. Water is then conveyed to the village of Wendover.

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Parameter	Legislation	Corrective Action
May 8, 2024	164929	2851 Principale	1 TC Distribution	O. Reg 170/03	Resampled at location and upstream /downstream All Results = 0

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
No Non-Compliance identified for 2024				

Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure	Corrective Action	Status
No Non-Compliance identified for 2024				

Flows

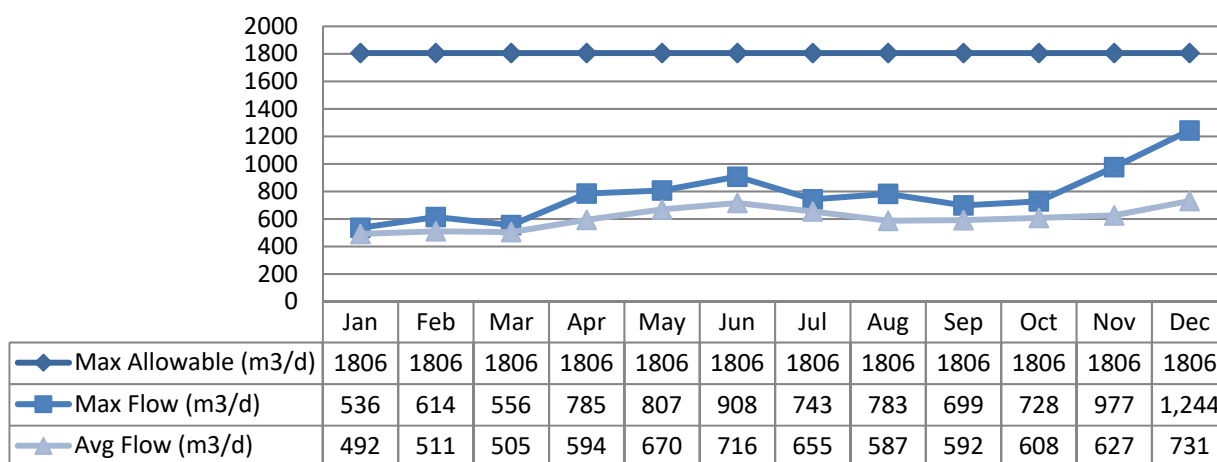
Having a 2024 annual average treated day flow of 500.5 m³/day, the Wendover Drinking Water System is operating at less than one third of its rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water Ontario Regulation 387/04. Water Taking and Transfers requires all water takers to report daily water taking amounts to the Water Taking Reporting System (WTRS) electronic database. 2024 Raw Flow Data was submitted to the Ministry electronically under permit #96-P-4096. The confirmation and a copy of the data that was submitted are attached in Appendix A.

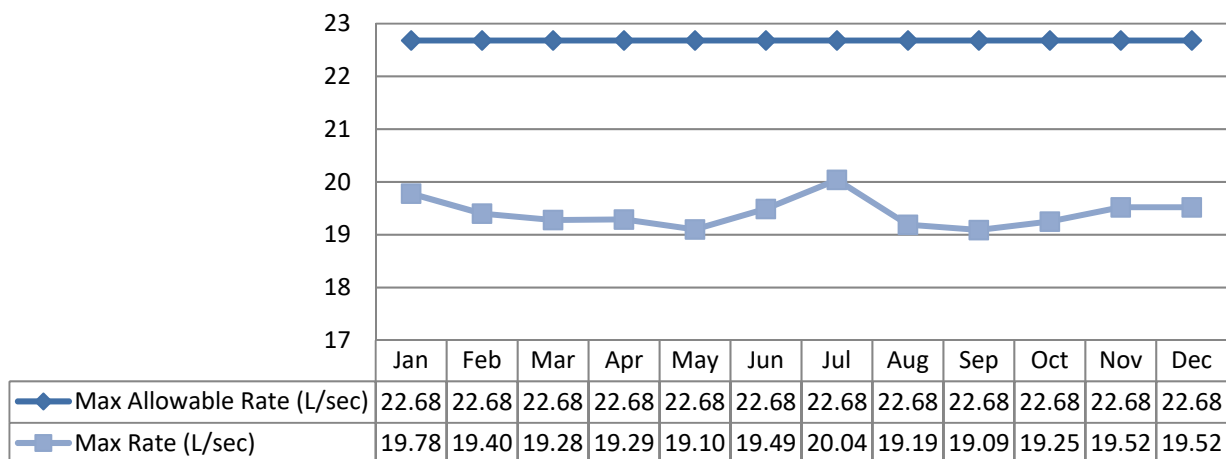
Total Monthly Flows (m³/d)

Max Allowable Flow - PTTW 1806 m³/d



Monthly Rated Flows (L/s)

Max allowable rate - PTTW 22.68 L/sec



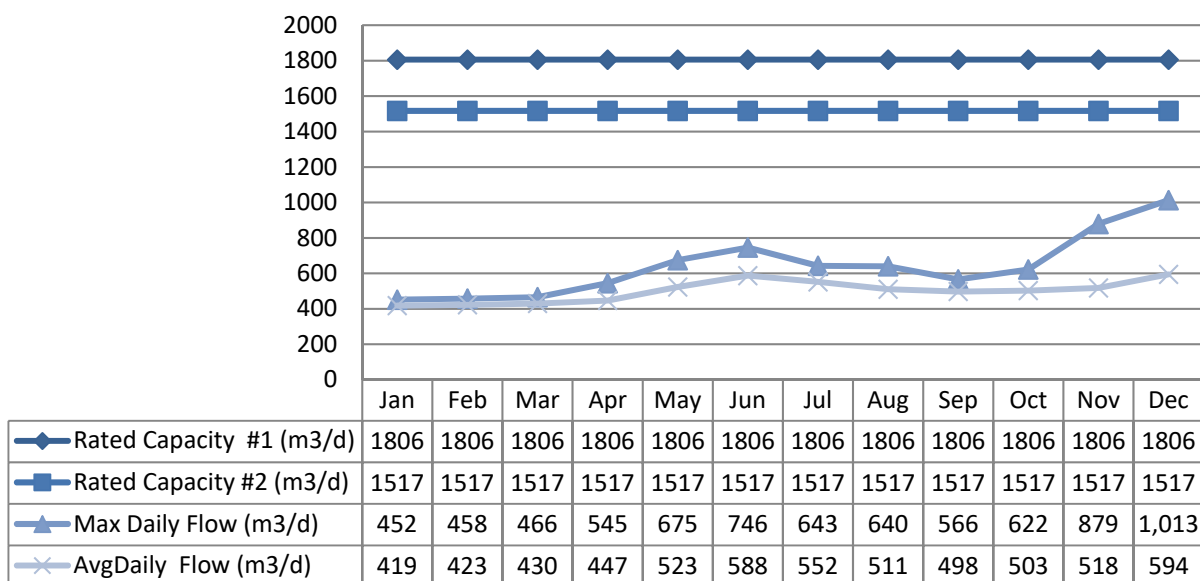
Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence Number: 169-102
Issue Number: 4

Monthly Rated Flows

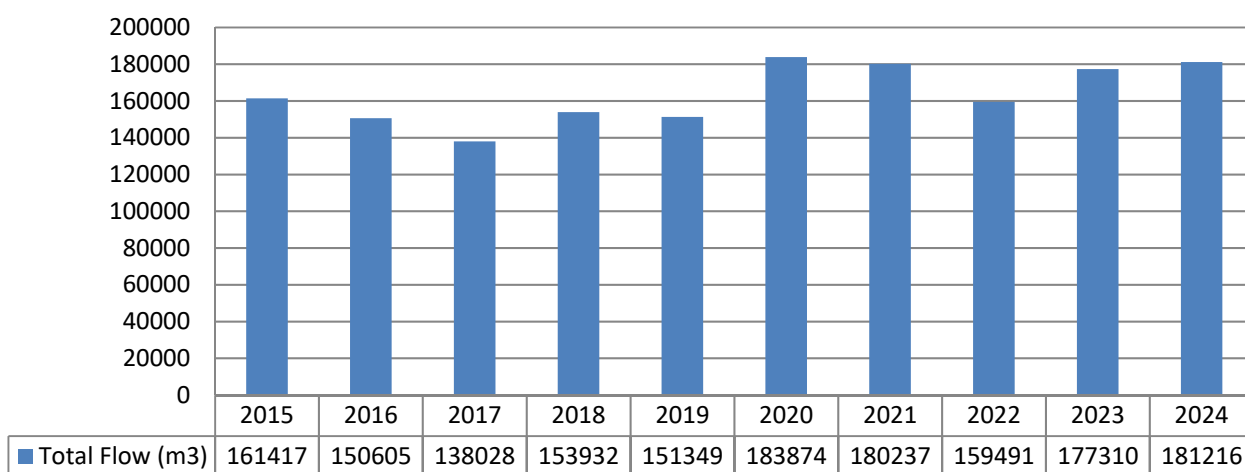
Rated Capacity – MDWL WTP #1 - 1806 m³/d for raw water temperature >1°C

#2 - 1517 m³/d for raw water temperature <1°C



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Water	53	0	129	20	6400	N/A	N/A
Treated Water	53	0	0	0	0	<2	2
Distribution Water	163	0	0	0	1	<2	2

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity, In-House (NTU) – RW	161	2.60	33.9
Turbidity, In-House (NTU) – TW	255	0.03	0.33
Turbidity, On-Line (NTU) – Filter #1	8760	0.01	2.56
Turbidity, On-Line (NTU) – Filter #2	8760	0.01	3.15
Free Chlorine Residual, On-Line (mg/L) – TW	8760	0.56	3.7
Free Chlorine Residual, On-Line (mg/L) – DW	8760	0.23	3.68

NOTE: spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03

Inorganic Parameters

These parameters are tested as a requirement under 170/03. Sodium and Fluoride are required to be tested every 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested annually as required under 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- BDL = Below the laboratory detection level

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2024/07/16	< 0.1	6.0	No	No
Arsenic: As (ug/L) - TW	2024/07/16	0.2	25.0	No	No
Barium: Ba (ug/L) - TW	2024/07/16	16.0	1000.0	No	No
Boron: B (ug/L) - TW	2024/07/16	8.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2024/07/16	< 0.015	5.0	No	No
Chromium: Cr (ug/L) - TW	2024/07/16	< 1.0	50.0	No	No
Mercury: Hg (ug/L) - TW	2024/07/16	0.02	1.0	No	No
Selenium: Se (ug/L) - TW	2024/07/16	< 1.0	50.0	No	No
Uranium: U (ug/L) - TW	2024/07/16	< 0.05	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2024/01/17	<0.1	1.5	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Nitrite (mg/L) - TW	2024/01/17	< 0.08	1.0	No	No
Nitrite (mg/L) - TW	2024/04/09	0.09	1.0	No	No
Nitrite (mg/L) - TW	2024/07/11	< 0.05	1.0	No	No
Nitrite (mg/L) - TW	2024/10/8	< 0.05	1.0	No	No
Nitrate (mg/L) - TW	2024/01/17	0.29	10.0	No	No
Nitrate (mg/L) - TW	2024/04/09	0.34	10.0	No	No
Nitrate (mg/L) - TW	2024/07/11	0.26	10.0	No	No
Nitrate (mg/L) - TW	2024/10/8	0.20	10.0	No	No
Sodium: Na (mg/L) - TW	2022/09/15	24.20	20*	N/A	N/A
Sodium: Na (mg/L) - TW	2022/09/20	23.10	20*	N/A	N/A

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified mg/L when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O.Reg 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (mg/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	4	46	52	N/A	N/A
pH	2	4	6.8	6.9	N/A	N/A
Lead (mg/L)	2	2	0.003	0.005	0.01	0

Organic Parameters

These parameters are tested annually as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2024/07/16	< 0.3	5.0	No	No
Azinphos-methyl (ug/L) - TW	2024/07/16	< 1.0	20.0	No	No
Benzene (ug/L) - TW	2024/07/16	< 0.5	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2024/07/16	< 0.006	0.01	No	No
Bromoxynil (ug/L) - TW	2024/07/16	< 0.5	5.0	No	No
Carbaryl (ug/L) - TW	2024/07/16	< 3.0	90.0	No	No
Carbofuran (ug/L) - TW	2024/07/16	< 1.0	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2024/07/16	< 0.2	2.0	No	No
Chlorpyrifos (ug/L) - TW	2024/07/16	< 0.5	90.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. Exceedances	
				MAC	1/2 MAC
Diazinon (ug/L) - TW	2024/07/16	< 1.0	20.0	No	No
Dicamba (ug/L) - TW	2024/07/16	< 1.0	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW	2024/07/16	< 0.5	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2024/07/16	< 0.5	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2024/07/16	< 0.5	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2024/07/16	< 0.5	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/07/16	< 5.0	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2024/07/16	< 0.2	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/07/16	< 1.0	100.0	No	No
Diclofop-methyl (ug/L) - TW	2024/07/16	< 0.9	9.0	No	No
Dimethoate (ug/L) - TW	2024/07/16	< 1.0	20.0	No	No
Diquat (ug/L) - TW	2024/07/16	< 5.0	70.0	No	No
Diuron (ug/L) - TW	2024/07/16	< 5.0	150.0	No	No
Glyphosate (ug/L) - TW	2024/07/16	< 25.0	280.0	No	No
Malathion (ug/L) - TW	2024/07/16	< 5.0	190.0	No	No
Metolachlor (ug/L) - TW	2024/07/16	< 3.0	50.0	No	No
Metribuzin (ug/L) - TW	2024/07/16	< 3.0	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/07/16	< 0.5	80.0	No	No
Paraquat (ug/L) - TW	2024/07/16	< 1.0	10.0	No	No
PCB (ug/L) - TW	2024/07/16	< 0.05	3.0	No	No
Pentachlorophenol (ug/L) - TW	2024/07/16	< 0.2	60.0	No	No
Phorate (ug/L) - TW	2024/07/16	< 0.3	2.0	No	No
Picloram (ug/L) - TW	2024/07/16	< 5.0	190.0	No	No
Prometryne (ug/L) - TW	2024/07/16	< 0.1	1.0	No	No
Simazine (ug/L) - TW	2024/07/16	< 0.5	10.0	No	No
Terbufos (ug/L) - TW	2024/07/16	< 0.5	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2024/07/16	< 0.5	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/07/16	< 0.2	100.0	No	No
Triallate (ug/L) - TW	2024/07/16	< 10.0	230.0	No	No
Trichloroethylene (ug/L) - TW	2024/07/16	< 0.5	5.0	No	No
2,4,6-Trichlorophenol (ug/L) – TW	2024/07/16	< 0.2	5.0	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) ug/L) - TW	2024/07/16	< 10.0	100.0	No	No
Trifluralin (ug/L) – TW	2024/07/16	< 0.5	45.0	No	No
Vinyl Chloride (ug/L) – TW	2024/07/16	< 0.2	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2024/10/8	86	100	No	Yes
HAA Total (ug/L) Annual Average – DW	2024/10/8	55.6	80	No	Yes

MAC = Maximum Allowable Concentration as per O.Reg 169/03

MDL = Minimum detection limit

Additional Samples

There was no additional sampling required.

Major Maintenance Summary**Water Treatment Plant Maintenance**

Date	Description
2024	Minor repairs on chemical pumps throughout the year as needed as well as PLC adjustments
Jan 22	PLC loss of screen repair
Jan 22	Pressure release valve for influent raw flow maintenance
Jan 24	Soda Ash Mixer replaced Overload relay
Feb 15	Sedimentation and Flocculators cleaning maintenance
Feb 9	Replaced train 2 floc motor 1 and falcon dial out battery
Feb 13	Filter # 2 influent PRV repair
Mar 27	Replace electrical room sump pump and float
Sep 13	Change flow Meter Backwash & Treated
Dec 27	Ordered dual wall tank for chlorine bulk tank
Dec 27	Ordered new low lift pump

Distribution Maintenance

Date	Location Reference	Description
Jun 12	Distribution	Flushing of Hydrants
Oct 24	Principale Street West-Ouest	Flush dead ends
Oct 24	Distribution	Hydrant flushing and winterization
Dec 2	Water tower	Water tower inspection
Dec 27	Distribution	Watermain break repair 3139 Ave du Quai

Appendix A - WTRS Data and Submission Confirmation

Data was submitted electronically February 5, 2025.

WENDOVER DRINKING WATER SYSTEM / Raw Water

Annual Values and Summary								Units: cubic meter per day				
Station:								Daily Max: 1244.0 on December 04				
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	534.00	455.00	511.00	541.00	512.00	787.00	690.00	389.00	589.00	534.00	667.00	537.00
2	492.00	519.00	511.00	468.00	512.00	787.00	653.00	783.00	589.00	534.00	667.00	997.00
3	492.00	519.00	511.00	468.00	612.00	713.00	653.00	599.00	560.00	534.00	667.00	1060.00
4	492.00	519.00	481.00	505.00	612.00	713.00	653.00	599.00	560.00	615.00	600.00	1244.00
5	494.00	471.00	481.00	593.00	612.00	713.00	668.00	599.00	560.00	615.00	600.00	1031.00
6	494.00	471.00	449.00	593.00	719.00	573.00	668.00	512.00	577.00	615.00	602.00	837.00
7	494.00	489.00	449.00	593.00	719.00	582.00	668.00	512.00	577.00	538.00	602.00	838.00
8	439.00	489.00	552.00	568.00	569.00	582.00	720.00	512.00	577.00	538.00	558.00	838.00
9	439.00	545.00	552.00	568.00	569.00	582.00	720.00	586.00	517.00	561.00	558.00	967.00
10	536.00	545.00	552.00	482.00	652.00	684.00	560.00	586.00	517.00	561.00	625.00	967.00
11	536.00	545.00	453.00	482.00	652.00	684.00	560.00	586.00	575.00	575.00	625.00	794.00
12	505.00	487.00	453.00	571.00	652.00	684.00	743.00	597.00	575.00	575.00	513.00	794.00
13	505.00	487.00	497.00	571.00	611.00	865.00	743.00	597.00	699.00	679.00	513.00	579.00
14	505.00	614.00	497.00	571.00	611.00	902.00	743.00	692.00	699.00	679.00	513.00	579.00
15	467.00	614.00	537.00	785.00	722.00	902.00	650.00	692.00	699.00	728.00	612.00	579.00
16	467.00	507.00	537.00	785.00	722.00	902.00	650.00	567.00	613.00	728.00	612.00	549.00
17	471.00	507.00	537.00	574.00	678.00	908.00	583.00	567.00	613.00	728.00	612.00	549.00
18	471.00	524.00	509.00	574.00	678.00	908.00	583.00	567.00	584.00	634.00	638.00	599.00
19	526.00	524.00	509.00	615.00	807.00	869.00	625.00	582.00	584.00	634.00		599.00
20	526.00	516.00	463.00	615.00	807.00	869.00	625.00	582.00	614.00	634.00		586.00
21	526.00	516.00	463.00	615.00	695.00	651.00	625.00	449.00	614.00	703.00	638.00	586.00
22	469.00	421.00	510.00	543.00	695.00	651.00	739.00	449.00	614.00	703.00	977.00	586.00
23	469.00	526.00	510.00	543.00	707.00	651.00	739.00	687.00	518.00	651.00	957.00	670.00
24	495.00	526.00	510.00	579.00	793.00	606.00	521.00	687.00	518.00	651.00	612.00	667.00
25	495.00	526.00	470.00	579.00	793.00	606.00	521.00	687.00	538.00	585.00	702.00	667.00
26	490.00	461.00	470.00	738.00	793.00	640.00	711.00	613.00	538.00	585.00	702.00	667.00
27	490.00	461.00	556.00	738.00	667.00	640.00	711.00	613.00	580.00	585.00	549.00	678.00
28	490.00	517.00	516.00	738.00	667.00	575.00	711.00	632.00	580.00	575.00	549.00	678.00
29	487.00	517.00	516.00	608.00	566.00	575.00	643.00	632.00	687.00	575.00	537.00	678.00
30	487.00		541.00	608.00	566.00	690.00	643.00	518.00	687.00	575.00	537.00	627.00
31	455.00		541.00		787.00		582.00	518.00		418.00		627.00
Min	439.00	421.00	449.00	468.00	512.00	573.00	521.00	389.00	517.00	418.00	513.00	537.00
Mean	491.55	510.97	504.65	593.70	669.58	716.47	654.97	586.81	591.73	607.90	626.57	730.77
Max	536.00	614.00	556.00	785.00	807.00	908.00	743.00	783.00	699.00	728.00	977.00	1244.00